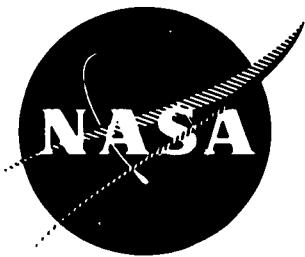


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OR 12,641



**THESAURUS OF TERMS
FOR INFORMATION ON
MECHANICS OF STRUCTURAL FAILURE**

By James L. Carpenter, Jr., and Néstor Moya

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prepared for

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16. Abstract This <u>Thesaurus</u> is comprised of approximately 700 subject terms used to describe the six problem areas in the mechanics of structural failure. The initial criteria for the selection of terms are their significance and frequency of use in the literature describing the mechanics of structural failure. The purpose of the <u>Thesaurus</u> is to provide the Aerospace Safety Research and Data Institute a list of key words and identifiers that afford effective retrieval of information regarding failure modes and mechanisms for aerospace structures. The <u>Thesaurus</u> includes both a conventional listing of subject terms and a Key Words In Context (KWIC) listing.		13. Type of Report and Period Covered Contractor Report	
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FOREWORD

This **Thesaurus of Terms** is comprised of the subject terms used to describe six problem areas in the mechanics of structural failure as defined in the Introduction. A modified version of the definitions, conventions, and cross-reference structure that appear in the NASA Thesaurus (NASA SP-7040) is used; however, a significant number of new terms are introduced.

The initial criteria for the selection of terms are their significance and frequency of use in the literature describing the mechanics of structural failure.

The purpose of the thesaurus is to provide the Aerospace Safety Research and Data Institute a list of key words and identifiers that afford effective retrieval of information from the Aerospace Safety Data Bank* regarding failure modes and mechanisms for aerospace structures.

*Located at the NASA Lewis Research Center, Cleveland, Ohio 44135

TABLE OF CONTENTS

FOREWORD	iii
INTRODUCTION	vii
PART I – ALPHABETICAL LISTINGS OF SUBJECT TERMS (A – Z)	1
PART II – KEY WORDS IN CONTEXT	15

INTRODUCTION

This Thesaurus of Terms is an alphabetical listing of subject terms (postable and nonpostable) identified during a literature search of the six problem areas listed below:

- I. **Life prediction of materials at high temperatures and exposed to monotonic and cyclic loading** — Includes information on low cycle and thermal fatigue particularly as it applies to turbine buckets in the gas turbine engine and high cycle fatigue data for materials used in components such as engine bearings.
- II. **Fracture toughness data on various structural materials** — Available data are categorized with respect to test methods, K_{Ic} versus K_c , and other peculiar parameters considered by the investigators. In particular, data derived from ASTM standard tests are identified.
- III. **Fracture mechanics analyses — capabilities and limitations** — A significant amount of publications deal with linear elastic fracture mechanics which assumes plane strain. Attempts were made to identify any work that was done, taking into account elastic-plastic theories.
- IV. **Hydrogen embrittlement of superalloys** — This subject is of interest regarding turbine buckets, which are exposed to high temperatures. It will be of increasing importance if additional interest develops in using hydrogen as the fuel in gas turbine engines.
- V. **Protective coatings** — Airbreathing engines operating in contaminated environments are in need of protection against attack by the contaminants. Information on the various candidate coatings and the effects of combustion products of contaminants in jet fuels on engine components is of prime interest. For example, the sulfur ordinarily contained in JP fuels reacts with salt present in shipboard and offshore environments and the resulting compounds attack turbine buckets severely.
- VI. **Composite materials data on low cycle and thermal fatigue** — Our aim here is to search for data related to composite structural materials.

The Thesaurus of Terms is divided into two parts. Part I is a conventional listing of terms, using a modified form of the conventions used in the NASA Thesaurus (NASA SP-7040). Part II is a rearrangement of the same terms into a Key Words in Context (KWIC) listing to group all related terms. In both listings, an asterisk (*) has been used to identify words or phrases which are not in the September 1971 edition of the NASA Thesaurus.

DEFINITIONS AND CONVENTIONS

The definitions and conventions employed in the development of the thesaurus follow.

Term Selection. Subject terms have been chosen on the basis of their significance and use in the literature on the mechanics of structural failure and their utility in enabling information retrieval. Particular consideration has been given to the indexing in the NASA Thesaurus (NASA SP-7040), however, new terms have been added when such terms will facilitate retrieval. An asterisk (*) has been used to denote new terms. For example:

*COMPRESSIVE LOADS

Singular vs Plural. The plural form has in general been used for subject terms. The singular form, however, is occasionally used for specific processes, properties, conditions, or hardware.

Grammatical Form. Subject terms are presented in the noun form.

Punctuation. An effort has been made to minimize the use of punctuation within subject terms. When it is used it becomes an integral part of the term.

Term Length. No more than 42 characters, including spaces and punctuation, are used for any subject term.

Term Ambiguity. When subject terms can have more than one meaning in aerospace usage, clarification is provided by the addition of a parenthetical qualifying expression which becomes part of the subject term. For example:

FAILURES (MATERIALS)
FATIGUE (MATERIALS)

Direct Entry. Subject terms that consist of more than one word are listed for direct entry, i.e., in their natural word order rather than in their inverted form. For example:

AERODYNAMIC HEATING, not HEATING, AERODYNAMIC

Abbreviations and Acronyms. Abbreviations and acronyms that are in common use in the aerospace community are employed in this listing. In most cases USE cross-references are made from the unabbreviated forms. For example:

NONDESTRUCTIVE TESTING
USE NDT

Synonyms. When candidate subject terms are true synonyms, one is chosen to be the valid or postable term and the other is provided with a USE cross-reference. For example:

FRACTURE TOUGHNESS
USE FRACTURE STRENGTH

Array Terms. Subject terms with ambiguous meanings or that are too broad for effective indexing or retrieval of information have been designated array terms and carry the following scope note. (USE A MORE SPECIFIC TERM -- CONSULT THE TERMS LISTED BELOW). Relationships with other postable terms are shown by denoting USE preferences.

Identifiers. Identifiers, i.e., subject terms that include a numerical or alphabetical designation or both are treated as regular subject terms. Identifiers are terms assigned to projects, programs, hardware, nicknames, trade names, etc. For example:

NASA IIB7
RENE 41
UDIMET 700

CROSS-REFERENCE STRUCTURE

Three cross-reference structures are used in this Thesaurus of Terms. In Part I, use (USE) and used for (UF) references are shown for all true synonyms and, also, an array structure is used to minimize ambiguity for broad terms. In Part II, the Key Words in Context (KWIC) listing collects related noun forms making no distinction between singular or plural, gerund, gerundive, etc. These cross-references have the following specific applications.

Use (USE). This indicates that the term is not "postable," i.e., not a valid term and the following term or terms should be used instead. For example:

FRACTURE TOUGHNESS
USE FRACTURE STRENGTH

Used for (UF). This is a reciprocal of the USE cross-reference and identifies valid, or "postable," terms. For example:

FRACTURE STRENGTH
UF FRACTURE TOUGHNESS

Array Terms. This cross-reference structure is used to identify "postable" subject terms that represent more specific concepts than the term used. To this extent, while they are not true synonyms, they are the reciprocal of the broader term. For example:

MECHANICAL PROPERTIES

(USE A MORE SPECIFIC TERM -- CONSULT THE TERMS LISTED BELOW)

USE ABRASION RESISTANCE

BRITTLENESS

CREEP STRENGTH

DUCTILITY

YIELD POINT

Key Words in Context (KWIC). The KWIC cross-reference structure collects all related noun forms included in the thesaurus, including both postable and nonpostable terms. For example:

TESTS

CREEP TESTS

NOTCH TESTS

TEST RESULTS

TESTING METHODS

WIND TUNNEL TESTS

Single terms, i.e., those that do not appear elsewhere in the thesaurus in another noun form, are not included in the KWIC listing. For example:

ADSORPTION

Identifiers that include a numerical or alphabetical designation, or both, are not included in the KWIC listing. For example:

B 1900

PRD 49

RENE 41

ALPHABETIZATION

A modified computer sorting has been used in the alphabetization of subject terms in this Thesaurus of Terms. The resulting arrangement closely resembles the word-by-word arrangement while simultaneously providing a standard numerical sequence for the numbered terms.

PART I
ALPHABETICAL LISTINGS
OF SUBJECT TERMS
(A - Z)

A

ABRASION
ABRASION RESISTANCE
ACCEPTABILITY
 UF ACCEPTANCE
ACCEPTANCE
 USE ACCEPTABILITY
*ACCIDENT ANALYSES
ACCIDENT INVESTIGATION
ACCIDENT PREVENTION
 UF PRECAUTIONS
*ACCIDENT PREVENTION MANUALS
*ACCIDENT REPORTS
ACCIDENTS
ACOUSTIC FATIGUE
 UF SONIC FATIGUE
*ACOUSTICAL CRACKS
ADSORPTION
AERODYNAMIC HEATING
AERODYNAMIC LOADS
AERODYNAMICS
AEROELASTICITY
AEROTHERMOELASTICITY
 UF THERMOAEROELASTICITY
AEROSPACE VEHICLES
*AF2-IDA
AIRCRAFT
AIRCRAFT DESIGN
AIRCRAFT STABILITY
AIRCRAFT STRUCTURES
ALARMS
 USE WARNING SYSTEMS
*ALLOWABLE STRESSES
ALLOYS
 UF METAL ALLOYS
 (USE A MORE SPECIFIC TERM--
 CONSULT THE TERMS LISTED BELOW)
 USE ALUMINUM ALLOYS
 BEARING ALLOYS
 *BE-CU ALLOY 25
 BERYLLIUM ALLOYS
 BETA II TITANIUM
 BINARY ALLOYS
 CHROMIUM ALLOYS
 COBALT ALLOYS
 HAFNIUM ALLOYS
 *HASTELLOYS
 HEAT RESISTANT ALLOYS
 HIGH STRENGTH ALLOYS
 *INCOLLOY 800
 *INCONEL ALLOYS
 *INCONEL 617
 *INCONEL 625
 *INCONEL 700
 *INCONEL 706
 *INCONEL 713
 *INCONEL 718
 *INCONEL 722
 *INCONEL X
 *INCONEL X-750
 *M 252
 MAGNESIUM ALLOYS
 *MAR M200
 MARAGING STEEL
 *MILD STEELS
 MOLYBENUM ALLOYS
 *MP 35M
 *MW 171G
 *NASA IIB
 *NASA IIB-7
 *NASA IIB-11
 *NICHROME 5
 NICKEL ALLOYS
 NIMONIC ALLOYS
 NIOBIUM ALLOYS
 REFRACTORY METAL ALLOYS
 RENE 41
 RENE 63
 RENE 77
 *RENE 95
 *RENE 120
 RHENIUM ALLOYS
 *SAP ALLOYS
 STAINLESS STEELS
 STEELS
 STELLITES
 TANTALUM ALLOYS
 TERNARY ALLOYS
 TITANIUM ALLOYS
 TUNGSTEN ALLOYS
 UDIMET ALLOYS
 *UDIMET 500
 *UDIMET 630
 *UDIMET 700
 WASPALOY
 ALUMINUM
 ALUMINUM ALLOYS
 ALUMINUM OXIDES
 *ANALYSIS METHODS
 *ANALYSIS TOOLS
 ANISOTROPY
 ANODIC COATINGS
 *ANTI-PLANE SHEAR
 USE SHEAR
 APPLICATION
 USE UTILIZATION

ASSEMBLY	*CERAMAL PROTECTIVE COATINGS
*ASSEMBLY PROCEDURES	USE PROTECTIVE COATINGS
*ASSEMBLY SPECIFICATIONS	CERAMALS
ATMOSPHERES	USE CERMETS
ATMOSPHERIC ENTRY	CERAMIC COATINGS
AXIAL COMPRESSION LOADS	CERAMICS
AXIAL LOADS	CERMETS
AXIAL STRAIN	UF CERAMALS
UF UNIAXIAL STRAIN	*CHARPY IMPACT TESTS
AXIAL STRESS	*CHECK LISTS
UF UNIAXIAL STRESS	CHEMICAL COMPOSITION
	*CHEMICAL DETECTION
	*CHEMICAL HAZARDS
	CHEMICAL MACHINING
	UF CHEMICAL MILLING
	CHEMICAL MILLING
	USE CHEMICAL MACHINING
	CHEMICAL REACTIONS
	CHROMIUM
	CHROMIUM ALLOYS
	CLADDING
	*CLEANING PROCEDURES
	CLEAVAGE
	COATINGS
	UF INORGANIC COATINGS
	(USE A MORE SPECIFIC TERM--
	CONSULT THE TERMS LISTED BELOW)
	USE ANODIC COATINGS
	CERAMIC COATINGS
	*DIFFUSION COATINGS
	OXIDATION RESISTANT COATINGS
	OXIDE COATINGS
	PHOTOELASTIC COATINGS
	PLASTIC COATING
	PROTECTIVE COATINGS
	*SILICIDE COATINGS
	COBALT
	COBALT ALLOYS
	CODES
	COFFIN COEFFICIENT
	COFFIN-MANSON LAW
	*COLUMBIUM ALLOYS
	USE NIOBIUM ALLOYS
	*COMBINED LOADS
	COMBINED STRESS
	*COMBUSTIBLE MATERIALS
	COMBUSTION INSTABILITY
	USE COMBUSTION STABILITY
	COMBUSTION STABILITY
	UF COMBUSTION INSTABILITY
	B
*B 1900	
BALL BEARINGS	
BAUSCHINGER EFFECT	
BEARING ALLOYS	
*BEARING LIFE	
*BEARING LOADS	
BEARINGS	
*BE-CU ALLOY 25	
*BEND TESTS	
BENDING	
BENDING FATIGUE	
*BENDING LOADS	
BENDING MOMENTS	
*BENDING VIBRATION	
BERYLLIUM	
BERYLLIUM ALLOYS	
BETA II TITANIUM	
*BIAXIAL PROPERTIES	
*BIAXIAL STRESS	
BIBLIOGRAPHIES	
BINARY ALLOYS	
*BLAST RESISTANCE	
*BLAST RESISTANCE CRITERIA	
BOLTS	
*BORIDE COMPOSITES	
*BORIDE Z	
BORON	
*BRITTLE FRACTURE	
BRITTLNESS	
BUCKLING	
UF COMPRESSIVE BUCKLING	C
*CALIBRATION STANDARDS	
CARBON	
CARBON FIBERS	
CASTINGS	
*CATASTROPHES	
*CATHODIC PROTECTION	

COMPATIBILITY
*COMPATIBLE MATERIALS
*COMPLEX SHAPES
*COMPONENT FAILURES
COMPOSITE MATERIALS
 UF COMPOSITES
COMPOSITE STRUCTURES
COMPOSITES
 USE COMPOSITE MATERIALS
COMPRESSIVE BUCKLING
 USE BUCKLING
*COMPRESSIVE LOADS
COMPRESSIVE STRENGTH
COMPUTER PROGRAMS
CONFIDENCE LIMITS
*CONFIGURATION TESTS
CONNECTIONS
 USE JOINTS (JUNCTIONS)
*CONSTANT LOADS
*CONSTRUCTION SPECIFICATIONS
CONTAMINANTS
CONTAMINATED ENVIRONMENTS
CONTAMINATION
*CORRECTIVE ACTION
CORROSION
*CORROSION INHIBITORS
CORROSION PREVENTION
CORROSION RESISTANCE
*CRACK ANALYSIS
*CRACK DETECTION
CRACK FORMATION
 USE CRACK INITIATION
CRACK INITIATION
 UF CRACK FORMATION
CRACK PROPAGATION
*CRACK TIP PLASTIC ZONE
CRACKS
*CREEP
CREEP ANALYSIS
CREEP PROPERTIES
 (USE A MORE SPECIFIC TERM--
 CONSULT THE TERMS LISTED BELOW)
 USE SHEAR CREEP
 TENSILE CREEP
CREEP RESISTANCE
 USE CREEP STRENGTH
*CREEP RUPTURE
CREEP RUPTURE STRENGTH
 UF STRESS RUPTURE STRENGTH
CREEP STRENGTH
 UF CREEP RESISTANCE
*CREEP STRENGTH DIAGRAMS

CREEP TESTS
CRITERIA
*CRITICAL FLAW SIZE
CRYOGENICS
CUMULATIVE DAMAGE
*CUMULATIVE EFFECTS
CYCLE LOADS
 USE CYCLIC LOADS
*CYCLIC CREEP
CYCLIC LOADS
 UF CYCLE LOADS
*CYCLIC TEMPERATURES
 USE THERMAL CYCLES
*CYCLIC TESTING
CYCLIC TORSION
CYLINDRICAL SHELLS

D

DAMAGE
*DAMAGED STRUCTURE LIFE
DANGER
 USE HAZARDS
DEFECTS
 USE MATERIAL DEFECTS
DEFLECTION
DEFORMATION
*DENSITY (PROPERTIES)
DESIGN
*DESIGN CODES
*DESIGN CRITERIA
*DESIGN GUIDES
*DESIGN PROCEDURES
*DESIGN STANDARDS
*DETECTION SYSTEMS
*DIBORIDES
DIFFUSION
*DIFFUSION COATINGS
DIRECTORIES
DISASTERS
*DISCONTINUITIES
 USE MATERIAL DEFECTS
*DISPERSION STRENGTHENED MATERIALS
*DISSIMILAR MATERIALS BONDING
*DISTORTION
*DUCTILE-BRITTLE TRANSITION
*DUCTILE FRACTURE
DUCTILITY
DYNAMIC LOADS
*DYNAMIC STRESSES
DYNAMIC TESTS

E

EDDY CURRENTS
EFFECTS
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)

USE BAUSCHINGER EFFECT
*CUMULATIVE EFFECTS
ENVIRONMENTAL EFFECTS
*FREQUENCY EFFECTS
*JET ENGINE FUEL EFFECTS
*NOTCH EFFECTS
TEMPERATURE EFFECTS

ELASTIC MODULUS
USE MODULUS OF ELASTICITY

ELASTICITY
USE ELASTIC PROPERTIES

*ELASTIC-PLASTIC ANALYSIS

*ELASTIC-PLASTIC MODULUS
USE MODULUS OF ELASTICITY

ELASTIC PROPERTIES
UF ELASTICITY
INELASTICITY
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)

USE AEROELASTICITY
AEROTHERMOELASTICITY
MODULUS OF ELASTICITY
PHOTOELASTICITY
THERMOELASTICITY

ELASTIC STABILITY

ELECTRON MICROSCOPY

ELECTROPLATING

ELONGATION
UF TENSILE ELONGATION

EMBRITTLEMENT

*ENGINEERING STANDARDS

*ENVIRONMENTAL CAPABILITY

ENVIRONMENTAL EFFECTS

ENVIRONMENTAL ENGINEERING

ENVIRONMENTAL TESTS

ENVIRONMENTS

EPOXY COMPOUNDS

EPOXY RESINS

*EROSION RESISTANCE

*EXCESSIVE PRESSURES

*EXCESSIVE VIBRATIONS

*EXPECTED LIFE

*EXPERIMENTAL DATA

EXTRUSION METHODS

*EXTRUSIONS

F

FABRICATION
*FABRICATION METHODS

*FABRICATION STANDARDS

*FACTOR OF SAFETY

*FAIL-SAFE DESIGN
FAILURE
FAILURE ANALYSES
*FAILURE INVESTIGATIONS

*FAILURE MECHANISM

*FAILURE MODE

*FAILURE PREVENTION

*FAILURE REPORTS

*FAILURES (MATERIALS)

FASTENERS

FATIGUE (MATERIALS)
UF STRUCTURAL FATIGUE

FATIGUE DIAGRAMS
USE S-N DIAGRAMS
STRESS-STRAIN DIAGRAMS

FATIGUE LIFE

FATIGUE PROPERTIES

FATIGUE STRENGTH

*FATIGUE TESTING MACHINES

FATIGUE TESTS

FAULT MECHANICS
USE FRACTURE MECHANICS

*FEDERAL REGULATIONS

*FIBER-REINFORCED COMPOSITES

FIBER STRENGTH

FIBERS
UF GLASS FIBERS

*FIELD INSPECTION TECHNIQUES

FINITE ELEMENT ANALYSIS

*FLAT PANELS

FLAT PLATES

FLAWS
USE MATERIAL DEFECTS

FLIGHT TESTS

FLUTTER

FOREIGN BODIES

FORGINGS

*FRACTURE ANALYSIS

FRACTURE MECHANICS
UF FAULT MECHANICS
MOHR CIRCLES

*FRACTURE PROPERTIES
USE MECHANICAL PROPERTIES

FRACTURE RESISTANCE
USE FRACTURE STRENGTH

FRACTURE STRENGTH
UF FRACTURE RESISTANCE
FRACTURE TOUGHNESS
*FRACTURE TESTS
FRACTURE TOUGHNESS
USE FRACTURE STRENGTH
FRACTURES (MATERIALS)
FRAGMENTATION
*FRAGMENTATION DISPERSALS
*FREQUENCY EFFECTS
FUEL CORROSION
*FUSED SILICA
FUSELAGES

HIGH-CYCLE FATIGUE
HIGH PRESSURE
HIGH SPEED
HIGH STRENGTH
HIGH STRENGTH ALLOYS
HIGH TEMPERATURE
HIGH TEMPERATURE ALLOYS
USE HEAT RESISTANT ALLOYS
HIGH TEMPERATURE ENVIRONMENTS
HIGH TEMPERATURE MATERIALS
USE REFRactory MATERIALS
HIGH TEMPERATURE TESTS
*HONEYCOMB SANDWICH PANELS
*HOT CORROSION

UF SULFIDATION

HUMIDITY
HYDROGEN
*HYDROGEN EMBRITTLEMENT
*HYDROGEN ENVIRONMENT EMBRITTLEMENT
*HYDROGEN REACTION EMBRITTLEMENT
HYPERVELOCITY IMPACT

G
GAS TURBINE ENGINES
GLASS FIBERS
USE FIBERS
*GRAPHITE-EPOXY SYSTEMS
GRIFFITH CRACK
*GROUND-TO-AIR CYCLES
*GUIDES
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE *DESIGN GUIDES
*INSPECTION GUIDES
*SAFETY GUIDES
GUST LOADS

IMPACT
IMPACT STRENGTH
IMPERFECTIONS
USE MATERIAL DEFECTS

IMPLOSIONS
IMPURITIES
*INCOLOY 800
*INCONEL ALLOYS
*INCONEL X
*INCONEL X750
*INCONEL 617
*INCONEL 625
*INCONEL 700
*INCONEL 706
*INCONEL 713
*INCONEL 718
*INCONEL 722

INDEXES
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)

USE BIBLIOGRAPHIES
DIRECTORIES
INDEXES (DOCUMENTATION)
KWIC INDEXES

INDEXES (DOCUMENTATION)
INELASTICITY
USE ELASTIC PROPERTIES
INFLUENCE COEFFICIENTS
INORGANIC COATINGS
USE COATINGS

H
HAFNIUM
HAFNIUM ALLOYS
HANDBOOKS
HARDNESS
*HASTELLOYS
HAZARDS
UF DANGER
SAFETY HAZARDS
HEAT
HEAT CONDUCTION
HEAT EFFECTS
USE TEMPERATURE EFFECTS
*HEAT OF DEGRADATION
HEAT RESISTANT ALLOYS
UF HIGH TEMPERATURE ALLOYS
SUPERALLOYS
HEAT SHIELDING
HEAT TREATMENT

*INORGANIC BONDED COMPOSITES
INSPECTION
*INSPECTION GUIDES
*INSPECTION STANDARDS
INSTALLATION MANUALS
*INSTALLATION PROCEDURES
*INSTRUCTION MANUALS

J
*JET ENGINE FUEL EFFECTS
UF *JET FUEL EFFECTS
*JET FUEL EFFECTS
USE *JET ENGINE FUEL EFFECTS
JOINTS (JUNCTIONS)
UF CONNECTIONS

K
KWIC INDEXES

L
LABORATORY
*LABORATORY SIMULATIONS
*LABORATORY TESTS
LAMINATED MATERIALS
USE LAMINATES
LAMINATES
UF LAMINATED MATERIALS
LANDINGS
*LATTICE DIFFUSION
LAUNCHINGS
*LEAK DETECTION
*LEAK TESTING
LEAKAGE
LIFE (DURABILITY)
*LIFE EXPECTANCY
*LIFE PREDICTION
*LINEAR DAMAGE RULE
*LOAD CYCLES
LOAD DISTRIBUTION (FORCES)
LOADS (FORCES)
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE AERODYNAMIC LOADS
AXIAL COMPRESSION LOADS
AXIAL LOADS
*BEARING LOADS
*BENDING LOADS
*COMPRESSIVE LOADS
CYCLIC LOADS

DYNAMIC LOADS
RANDOM LOADS
*SHEAR LOADS
STATIC LOADS
*TORSIONAL LOADS
*LOW-CYCLE FATIGUE
*LOW DENSITY MATERIALS
*LOW STRENGTH STEELS
LOW TEMPERATURE
LOW TEMPERATURE TESTS
LUBRICANTS

M

*M 252
MACHINING
MAGNESIUM
MAGNESIUM ALLOYS
MAINTENANCE
*MAINTENANCE METHODS
*MAINTENANCE STANDARDS
MANGANESE
MANGANESE ALLOYS
MANUALS
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE *ACCIDENT PREVENTION MANUALS
*INSTALLATION MANUALS
*SAFETY MANUALS
*TECHNICAL MANUALS
*MAR M200
MARAGING STEEL
*MARGIN OF SAFETY
MARS ATMOSPHERE
*MATERIAL DEFECTS
UF DEFECTS
DISCONTINUITIES
FLAWS
IMPERFECTIONS
*MATERIAL DEGRADATION
*MATERIAL FRACTURES
*MATERIAL PROCESSING
MATERIALS
*MATERIALS COMPATIBILITY
*MEAN STRESS
MECHANICAL PROPERTIES
UF FRACTURE PROPERTIES
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE ABRASION RESISTANCE
AEROELASTICITY
AEROTHERMOELASTICITY

BRITTLENESS	MAGNESIUM
COMPRESSIVE STRENGTH	MANGANESE
CREEP PROPERTIES	MOLYBDENUM
CREEP RUPTURE STRENGTH	NICKEL
CREEP STRENGTH	NIOBIUM
DUCTILITY	REFRACTORY METALS
ELASTIC PROPERTIES	RHENIUM
FATIGUE LIFE	TANTALUM
FIBER STRENGTH	TITANIUM
FRACTURE STRENGTH	TUNGSTEN
HARDNESS	METHODS
HIGH STRENGTH	(USE A MORE SPECIFIC TERM-- CONSULT THE TERMS LISTED BELOW)
IMPACT STRENGTH	USE *ANALYSIS METHODS
MODULUS OF ELASTICITY	*FABRICATION METHODS
NOTCH SENSITIVITY	*MAINTENANCE METHODS
NOTCH STRENGTH	*NDE METHODS
PHOTOELASTICITY	*NDI METHODS
PLASTIC PROPERTIES	*NDT METHODS
POISSON RATIO	*STIFFNESS METHODS
*RESIDUAL STRENGTH	*TESTING METHODS
RESILIENCE	*MICROSTRUCTURES
SHEAR CREEP	*MILD STEELS
SHEAR PROPERTIES	MINER RULE
SHEAR STRENGTH	USE PALMGREN-MINER RULE
STIFFNESS	MODULUS OF ELASTICITY
STRENGTH	UF ELASTIC MODULUS
*STRENGTH RETENTION	ELASTIC-PLASTIC MODULUS
STRESS RATIO	YOUNG MODULUS
STRESS RELAXATION	YOUNGS MODULUS
STRUCTURAL STABILITY	MOHR CIRCLES
TENSILE CREEP	USE FRACTURE MECHANICS
TENSILE PROPERTIES	MOLYBDENUM
TENSILE STRENGTH	MOLYBDENUM ALLOYS
THERMAL RESISTANCE	*MONOTONIC STRESS
TOUGHNESS	*MP 35N
WELD STRENGTH	*MW 171G
YIELD POINT	
YIELD STRENGTH	
METAL ALLOYS	N
USE ALLOYS	*NASA IIB
METAL FOILS	*NASA IIB-7
METAL MATRIX COMPOSITES	*NASA IIB-11
*METALLIC MATERIALS	*NDE
METALLOGRAPHY	UF NONDESTRUCTIVE EVALUATION
METALS	*NDE METHODS
(USE A MORE SPECIFIC TERM-- CONSULT THE TERMS LISTED BELOW)	*NDE TECHNIQUES
USE ALUMINUM	*NDI
BERYLLIUM	UF NONDESTRUCTIVE INSPECTION
CHROMIUM	*NDI METHODS
COBALT	*NDI TECHNIQUES
HAFNIUM	*NDT
	UF NONDESTRUCTIVE TESTING

*NDT METHODS
*NDT TECHNIQUES
*NICHROME 5
NICKEL
NICKEL ALLOYS
NIMOMIC ALLOYS
NIOBium
NIOBium ALLOYS
UF COLUMBIUM ALLOYS
*NONMETALLIC MATERIALS
NOTCH
*NOTCH EFFECTS
NOTCH SENSITIVITY
NOTCH STRENGTH
UF NOTCH TOUGHNESS
NOTCH TESTS
*NOTCH TOUGHNESS
USE NOTCH STRENGTH
*NOTCHED SPECIMENS
*NYLON

O

*OPERATING MANUALS
*OPERATING PROCEDURES
*OPERATING STANDARDS
OPERATIONS
OSCILLATIONS
*OVERHAUL
*OVERHAUL MANUALS
*OVERHAUL PROCEDURES
*OVERLOAD
*OVERPRESSURIZATION
*OVERSTRESS
OXIDATION
OXIDATION RESISTANCE
*OXIDATION RESISTANT COATINGS
*OXIDE COATINGS

P

PALMGREN-MINER RULE
UF MINER RULE
*PANELS (STRUCTURAL)
*PERFORMANCE CRITERIA
PERFORMANCE PREDICTION
*PERFORMANCE STANDARDS
PERTURBATIONS
*PHOTOELASTIC COATINGS
PHOTOELASTIC MATERIALS
*PHOTOELASTIC MEASUREMENTS
PHOTOELASTICITY

PHYSICAL PROPERTIES
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE CREEP
DEFORMATION
*DENSITY (PROPERTIES)
MECHANICAL PROPERTIES
*PLANE STRAIN
*PLANE STRAIN FRACTURE TOUGHNESS
*PLANE STRESS
PLASTIC COATINGS
PLASTIC DEFORMATION
PLASTIC PROPERTIES
UF PLASTICITY
*PLASTIC STRAIN
*PLASTIC ZONE
PLASTICITY
USE PLASTIC PROPERTIES
PLASTICS
POISSON RATIO
UF POISONS RATIO
POISONS RATIO
USE POISSON RATIO
POLYMERS
POROSITY
*POSTBUCKLING
POWDER METALLURGY
*PRD 49
PRECAUTIONS
USE ACCIDENT PREVENTION
PRECIPITATION HARDENING
UF STRAIN AGING
*PRE-CRACKED SPECIMENS
PRESSURE
UF SURFACE PRESSURE
PRESSURE OSCILLATIONS
*PRESSURE TANKS
*PRESSURE VESSEL CODES
PRESSURE VESSELS
*PRESSURIZATION
PROCEDURES
(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)
USE *ASSEMBLY PROCEDURES
CLEANING PROCEDURES
DESIGN PROCEDURES
INSTALLATION PROCEDURES
OPERATING PROCEDURES
*OVERHAUL PROCEDURES
PROGRAMED LOADS
*PROOF TESTS
PROPELLANT TANKS

PROPERTIES

(USE A MORE SPECIFIC TERM--
CONSULT THE TERMS LISTED BELOW)

USE *BIAXIAL PROPERTIES
CREEP PROPERTIES
ELASTIC PROPERTIES
FATIGUE PROPERTIES
*FRACTURE PROPERTIES
MECHANICAL PROPERTIES
PHYSICAL PROPERTIES
PLASTIC PROPERTIES
SURFACE PROPERTIES
TENSILE PROPERTIES
THERMAL PROPERTIES
PROTECTIVE COATINGS
UF *CERAMAL PROTECTIVE COATINGS
*PROTECTIVE DEVICES

R

*RANDOM LOAD CYCLES
RANDOM LOADS
*RECOMMENDED PRACTICES
*REDUNDANT SYSTEMS
REFRACTORY MATERIALS
UF HIGH TEMPERATURE MATERIALS
REFRACTORY METAL ALLOYS
REFRACTORY METALS
REGULATIONS
REINFORCEMENT (STRUCTURES)
RELIABILITY
RELIABILITY ANALYSIS
RENE 41
RENE 63
RENE 77
*RENE 80
*RENE 85
*RENE 95
*RENE 100
*RENE 120
*REPAIR
*REPLACEMENT
*RESIDUAL STRENGTH
*RESIDUAL STRESS
RESILIENCE
RESIN BONDED COMPOSITES
RESINS
RESISTANCE
RESISTANCE HEATING
RESONANCE
*REWORK
RHENIUM

RHENIUM ALLOYS
RIGID STRUCTURES
RIGIDITY
ROLLER BEARINGS
ROLLING
*ROLLING ELEMENT FATIGUE LIFE
RUPTURING

S

S-N DIAGRAMS
UF FATIGUE DIAGRAMS
SAFETY
*SAFETY CODES
*SAFETY CRITERIA
SAFETY DEVICES
*SAFETY DIRECTIVES
SAFETY FACTORS
*SAFETY GUIDES
SAFETY HAZARDS
USE HAZARDS
SAFETY MANAGEMENT
*SAFETY MANUALS
*SAFETY POLICIES
*SAFETY PRACTICES
*SAFETY PRINCIPLES
*SAFETY REGULATIONS
*SAFETY SPECIFICATIONS
*SAFETY STANDARDS
*SAFETY SYSTEMS
*SAFETY TECHNOLOGY
*SALT WATER INGESTION
SANDWICH STRUCTURES
*SAP ALLOYS
SHEAR
UF ANTI-PLANE SHEAR
SHEAR CREEP
*SHEAR LIP
*SHEAR LOADS
SHEAR PROPERTIES
SHEAR STRAIN
SHEAR STRENGTH
SHEET METAL
*SHELL BUCKLING
SHELLS (STRUCTURAL FORMS)
SHOCK
SHOCK WAVES
*SILICIDE COATINGS
SILICON
*SONIC FATIGUE
USE ACOUSTIC FATIGUE

SPACECRAFT	STRESS DISTRIBUTION
SPECIFICATIONS	USE STRESS CONCENTRATION
SPHERICAL SHELLS	*STRESS INTENSITY FACTOR
SPIRAL WRAPPING	STRESS MEASUREMENT
SPLINES	*STRESS RAISERS
STABILITY	STRESS RATIO
STAINLESS STEELS	STRESS RELAXATION
*STANDARD OPERATING PROCEDURES	*STRESS RUPTURE
STANDARDS	STRESS RUPTURE STRENGTH
(USE A MORE SPECIFIC TERM--	USE CREEP RUPTURE STRENGTH
CONSULT THE TERMS LISTED BELOW)	STRESS-STRAIN DIAGRAMS
USE	UF FATIGUE DIAGRAMS
*CALIBRATION STANDARDS	STRUCTURAL ANALYSIS
*DESIGN STANDARDS	STRUCTURAL DESIGN
*ENGINEERING STANDARDS	STRUCTURAL DYNAMICS
*FABRICATION STANDARDS	STRUCTURAL ENGINEERING
*INSPECTION STANDARDS	STRUCTURAL FAILURE
*MAINTENANCE STANDARDS	STRUCTURAL FATIGUE
*OPERATING STANDARDS	USE FATIGUE (MATERIALS)
*SAFETY STANDARDS	STRUCTURAL RIGIDITY
*STANDARD OPERATING PROCEDURES	USE STRUCTURAL STABILITY
*TESTING STANDARDS	STRUCTURAL SAFETY
*STATIC CRACK GROWTH	STRUCTURAL STABILITY
STATIC LOADS	UF STRUCTURAL RIGIDITY
STATIC TESTS	STRUCTURES
STATISTICAL ANALYSIS	(USE A MORE SPECIFIC TERM--
*STATISTICAL DATA	CONSULT THE TERMS LISTED BELOW)
STATISTICAL PROBABILITY	USE
*STEEL BALLS	AIRCRAFT STRUCTURES
STEELS	CYLINDRICAL SHELLS
STELLITES	*HONEYCOMB SANDWICH PANELS
STIFFNESS	*MICROSTRUCTURES
*STIFFNESS METHODS	*PRESSURE TANKS
*STORAGE TESTS	PRESSURE VESSELS
*STRAIN	PROPELLANT TANKS
*STRAIN ACCUMULATION	RIGID STRUCTURES
STRAIN AGING	SANDWICH STRUCTURES
USE PRECIPITATION HARDENING	SHELLS (STRUCTURAL FORMS)
STRAIN DISTRIBUTION	SPHERICAL SHELLS
USE STRESS CONCENTRATION	WELDED STRUCTURES
*STRAIN ENERGY RELEASE	*SUBCRITICAL CRACK GROWTH
STRAIN HARDENING	SULFIDATION
STRAIN RATE	USE HOT CORROSION
STRENGTH	SULFUR
*STRENGTH RETENTION	*SULFUR PENETRATION
*STRESS	SUPERALLOYS
STRESS ANALYSIS	USE HEAT RESISTANT ALLOYS
STRESS CONCENTRATION	*SURFACE CONDITIONS
UF STRAIN DISTRIBUTION	SURFACE CRACKS
STRESS DISTRIBUTION	SURFACE DEFECTS
STRESS CORROSION	SURFACE FINISHING
*STRESS CORROSION CRACKING	UF SURFACE TREATMENT

SURFACE PRESSURE
 USE PRESSURE
SURFACE PROPERTIES
*SURFACE TREATMENT
 USE SURFACE FINISHING
*SYSTEM DESIGN
*SYSTEM SAFETY

PROOF TESTS
STATIC TESTS
*STORAGE TESTS
*TENSION TESTS
VIBRATION TESTS
*WIND TUNNEL TESTS

T

TANTALUM
TANTALUM ALLOYS
*TECHNICAL MANUALS
*TEFLON
TEMPERATURE
*TEMPERATURE CYCLES
 USE *THERMAL CYCLES
TEMPERATURE DISTRIBUTION
TEMPERATURE EFFECTS
 UF HEAT EFFECTS
 THERMAL EFFECTS

THEORIES
THERMAL CONDUCTIVITY
*THERMAL CYCLES
 UF CYCLIC TEMPERATURES
 TEMPERATURE CYCLES
THERMAL EFFECTS
 USE TEMPERATURE EFFECTS
THERMAL ENVIRONMENTS
THERMAL EXPANSION
THERMAL FATIGUE
THERMAL PROPERTIES
THERMAL PROTECTION
THERMAL RESISTANCE
THERMAL SHOCK
THERMAL STABILITY
THERMAL STRESSES
THERMOAEROELASTICITY
 USE AEROTHERMOELASTICITY

*TEMPERATURE LIMITATIONS
*TEMPERING TEMPERATURE
TENSILE CREEP
*TENSILE ELONGATION
 USE ELONGATION
*TENSILE LOADS
 USE TENSILE STRESS
TENSILE PROPERTIES
TENSILE STRENGTH
TENSILE STRESS
 UF *TENSILE LOADS
*TENSION TESTS
TERNARY ALLOYS
*TEST RESULTS
*TESTING METHODS
*TESTING SPECIFICATIONS
*TESTING STANDARDS
TESTS

 (USE A MORE SPECIFIC TERM-
 CONSULT THE TERMS LISTED BELOW)
 USE *BEND TESTS
 *CHARPY IMPACT TESTS
 *CONFIGURATION TESTS
 CREEP TESTS
 DYNAMIC TESTS
 FATIGUE TESTS
 FLIGHT TESTS
 *FRACTURE TESTS
 HIGH TEMPERATURE TESTS
 *LABORATORY TESTS
 LOW TEMPERATURE TESTS
 NOTCH TESTS

 TUNGSTEN
 TUNGSTEN ALLOYS
 TURBINE BLADES
 TURBINES
 TURBULENCE

U

*UARL-344
UDIMET ALLOYS
*UDIMET 500
*UDIMET 630

*UDIMET 700
*ULTIMATE STRENGTH
UNIAXIAL STRAIN
 USE AXIAL STRAIN
*UNIAXIAL STRESS
 USE AXIAL STRESS
*USEFUL LIFE
UTILIZATION
 UF APPLICATION

WAVE PROPAGATION
*WEIGHT SAVINGS
WELD STRENGTH
WELDED STRUCTURES
WELDING
*WIND TUNNEL TESTS
WING PANELS
*WIRES

V

*VACUUM ANNEALING
*VARIABLE TEMPERATURE
VIBRATION
VIBRATION TESTS

W

WARNING DEVICES
WARNING SIGNALS
WARNING SYSTEMS
WASPALOY

X

X-RAY DIFFRACTION

Y

YIELD POINT
YIELD STRENGTH
YIELD STRESS
YOUNG MODULUS
 USE MODULUS OF ELASTICITY
YOUNGS MODULUS
 USE MODULUS OF ELASTICITY

PART II
KEY WORDS IN CONTEXT

A

ABRASION
ABRASION
ABRASION RESISTANCE
ACCEPTANCE
ACCEPTABILITY
ACCEPTANCE
ACCIDENTS
*ACCIDENT ANALYSES
ACCIDENT INVESTIGATION
ACCIDENT PREVENTION
*ACCIDENT PREVENTION MANUALS
*ACCIDENT REPORTS
ACCIDENTS
AERODYNAMICS
AERODYNAMIC HEATING
AERODYNAMIC LOADS
AERODYNAMICS
AEROSPACE
AEROSPACE
AEROSPACE VEHICLES
AIRCRAFT
AIRCRAFT
AIRCRAFT DESIGN
AIRCRAFT SAFETY
AIRCRAFT STABILITY
AIRCRAFT STRUCTURES
ALLOYS
ALLOYS
ALUMINUM ALLOYS
BEARING ALLOYS
*BE-CU ALLOY 25
BERYLLIUM ALLOYS
BINARY ALLOYS
CHROMIUM ALLOYS
COBALT ALLOYS
COLUMBIUM ALLOYS
HAFNIUM ALLOYS
HEAT RESISTANT ALLOYS
HIGH STRENGTH ALLOYS
INCONEL ALLOYS
MAGNESIUM ALLOYS
MANGANESE ALLOYS
METAL ALLOYS
MOLYBDENUM ALLOYS
NICKEL ALLOYS
NIMONIC ALLOYS
NIOBUM ALLOYS
REFRACTORY METAL ALLOYS
RHENIUM ALLOYS
*SAP ALLOYS

SUPERALLOYS
TANTALUM ALLOYS
TERNARY ALLOYS
TITANIUM ALLOYS
TUNGSTEN ALLOYS
UDIMET ALLOYS
ALUMINUM
ALUMINUM
ALUMINUM ALLOYS
ALUMINUM OXIDES
ANALYSIS
*ACCIDENT ANALYSES
ANALYSIS
*ANALYSIS METHODS
*ANALYSIS TOOLS
*CRACK ANALYSIS
CREEP ANALYSIS
*ELASTIC-PLASTIC ANALYSIS
FAILURE ANALYSES
FINITE ELEMENT ANALYSIS
*FRACTURE ANALYSIS
RELIABILITY ANALYSIS
STATISTICAL ANALYSIS
STRESS ANALYSIS
STRUCTURAL ANALYSIS
*THERMOMECHANICAL ANALYSIS
ASSEMBLY
ASSEMBLY
ASSEMBLY PROCEDURES
ASSEMBLY SPECIFICATIONS
ATMOSPHERES
ATMOSPHERES
ATMOSPHERIC ENTRY
MARS ATMOSPHERE

B

BEARINGS
BALL BEARINGS
BEARING ALLOYS
*BEARING LIFE
*BEARING LOADS
BEARINGS
ROLLER BEARINGS
BENDING
BENDING
BENDING FATIGUE
*BENDING LOADS
BENDING MOMENTS
BENDING TEST
*BENDING VIBRATION

BLAST

BLAST
*BLAST RESISTANCE
*BLAST RESISTANCE CRITERIA

C**CARBON**

CARBON
CARBON FIBERS

CHEMICAL

CHEMICAL
CHEMICAL COMPOSITION
*CHEMICAL DETECTION
*CHEMICAL HAZARDS
CHEMICAL MACHINING
CHEMICAL MILLING
CHEMICAL REACTIONS

COATINGS

ANODIC COATINGS
*CERAMAL PROTECTIVE COATINGS
CERAMIC COATINGS
COATINGS
*DIFFUSION COATINGS
INORGANIC COATINGS
*OXIDATION RESISTANCE COATINGS
*OXIDE COATINGS
*PHOTOELASTIC COATINGS
PLASTIC COATING
PROTECTIVE COATINGS
*SILICIDE COATINGS

CODES

CODES
*DESIGN CODES
*PRESSURE VESSEL CODES
*SAFETY CODES

COMPOSITES

*BORIDE COMPOSITES
COMPOSITE MATERIALS
COMPOSITE STRUCTURES
COMPOSITES
*FIBER-REINFORCED COMPOSITES
*INORGANIC BONDED COMPOSITES
METAL MATRIX COMPOSITES
RESIN BONDED COMPOSITES
THREE DIMENSIONAL COMPOSITES

COMPUTER

COMPUTER
COMPUTER PROGRAMS

CONTAMINANTS

CONTAMINANTS
CONTAMINATED ENVIRONMENTS
CONTAMINATION

CORROSION

CORROSION
*CORROSION INHIBITORS
CORROSION PREVENTION
CORROSION RESISTANCE
HOT CORROSION
STRESS CORROSION
*STRESS CORROSION CRACKING

CRACKS

ACOUSTICAL CRACKS
*CRACK ANALYSIS
*CRACK DETECTION
CRACK FORMATION
CRACK INITIATION
CRACK PROPAGATION
*CRACK TIP PLASTIC ZONE
CRACKS
GRIFFITH CRACK
*PRE-CRACKED SPECIMENS
*STATIC CRACK GROWTH
*STRESS CORROSION CRACKING
*SUBCRITICAL CRACK GROWTH
SURFACE CRACKS

***CREEP**

*CREEP
CREEP ANALYSIS
CREEP PROPERTIES
CREEP RESISTANCE
*CREEP RUPURE
CREEP RUPURE STRENGTH
CREEP STRENGTH
*CREEP STRENGTH DIAGRAMS
CREEP TESTS
*CYCLIC CREEP
TENSILE CREEP
SHEAR CREEP

CYCLES

CYCLE LOADS
CYCLES
CYCLIC CREEP
CYCLIC LOADS
CYCLIC TEMPERATURE
CYCLIC TESTING
CYCLIC TORSION
GROUND-TO-AIR CYCLES
TEMPERATURE CYCLES
THERMAL CYCLES

D**DAMAGE**

CUMULATIVE DAMAGE
DAMAGE

*DAMAGED STRUCTURE LIFE
 *LINEAR DAMAGE RULE
DESIGN
 AIRCRAFT DESIGN
 DESIGN
 *DESIGN CODES
 *DESIGN CRITERIA
 *DESIGN GUIDES
 *DESIGN PROCEDURES
 *DESIGN STANDARDS
 *FAIL-SAFE DESIGN
 *SYSTEM DESIGN
DUCTILITY
 *DUCTILE-BRITTLE TRANSITION
 DUCTILE FRACTURE
 *DUCTILITY

E

EFFECTS
 BAUSCHINGER EFFECT
 *CUMULATIVE EFFECTS
 ENVIRONMENTAL EFFECTS
 *FREQUENCY EFFECTS
 *JET ENGINE FUEL EFFECTS
 *NOTCH EFFECTS
 TEMPERATURE EFFECTS
 THERMAL EFFECTS
ELASTICITY
 AEROELASTICITY
 AEROTHERMOELASTICITY
 ELASTICITY
 ELASTIC-PLASTIC ANALYSIS
 ELASTIC PROPERTIES
 ELASTIC STABILITY
 MODULUS OF ELASTICITY
 PHOTOELASTICITY
 THERMOELASTICITY
EMBRITTLEMENT
 EMBRITTLEMENT
 *HYDROGEN EMBRITTLEMENT
 *HYDROGEN ENVIRONMENT EMBRITTLEMENT
 *HYDROGEN REACTION EMBRITTLEMENT
ENGINEERING
 ENGINEERING
 *ENGINEERING STANDARDS
 ENVIRONMENTAL ENGINEERING
 STRUCTURAL ENGINEERING
ENVIRONMENTS
 *CONTAMINATED ENVIRONMENTS
 *ENVIRONMENTAL EFFECTS

ENVIRONMENTAL ENGINEERING
 ENVIRONMENTAL TESTS
 ENVIRONMENTS
 HIGH TEMPERATURE ENVIRONMENTS
 *HYDROGEN ENVIRONMENT EMBRITTLEMENT
 THERMAL ENVIRONMENTS

F

FABRICATION
 FABRICATION
 *FABRICATION METHODS
 *FABRICATION STANDARDS
FAILURE
 *COMPONENT FAILURES
 FAILURE
 FAILURE ANALYSES
 *FAILURE INVESTIGATIONS
 *FAILURE MECHANISM
 *FAILURE MODE
 *FAILURE PREVENTION
 *FAILURE REPORT
 *FAILURES (MATERIALS)
 STRUCTURAL FAILURE
 FATIGUE (MATERIALS)
 ACOUSTIC FATIGUE
 BENDING FATIGUE
 FATIGUE (MATERIALS)
 FATIGUE DIAGRAMS
 FATIGUE LIFE
 FATIGUE PROPERTIES
 FATIGUE STRENGTH
 *FATIGUE TESTING MACHINES
 FATIGUE TESTS
 HIGH-CYCLE FATIGUE
 LOW-CYCLE FATIGUE
 *ROLLING ELEMENT FATIGUE LIFE
 *SONIC FATIGUE
 STRUCTURAL FATIGUE
 THERMAL FATIGUE
FIBERS
 CARBON FIBERS
 FIBER-REINFORCED COMPOSITES
 FIBERS
 GLASS FIBERS
FRACTURES (MATERIALS)
 *DUCTILE FRACTURE
 *FRACTURE ANALYSIS
 FRACTURE MECHANICS
 *FRACTURE PROPERTIES
 FRACTURE RESISTANCE
 FRACTURE STRENGTH

*FRACTURE TESTS
FRACTURE TOUGHNESS
FRACTURES (MATERIALS)
*MATERIAL FRACTURES
PLANE STRAIN FRACTURE TOUGHNESS

AXIAL COMPRESSION LOADS

AXIAL LOADS

*BEARING LOADS

*BENDING LOADS

*COMBINED LOADS

*COMPRESSIVE LOADS

*CONSTANT LOADS

*CYCLE LOADS

CYCLIC LOADS

DYNAMIC LOADS

*LOAD CYCLES

LOAD DISTRIBUTION (FORCES)

LOADS (FORCES)

PROGRAMMED LOADS

*RANDOM LOAD CYCLES

RANDOM LOADS

*SHEAR LOADS

STATIC LOADS

*TENSILE LOADS

*TORSIONAL LOADS

G

*GUIDES

*DESIGN GUIDES
*GUIDES
*INSPECTION GUIDES
*SAFETY GUIDES

H

HEAT

AERODYNAMIC HEATING
HEAT
HEAT CONDUCTION
HEAT EFFECTS
HEAT OF DEGRADATION
HEAT RESISTANT ALLOYS
HEAT SHIELDING
HEAT TREATMENT
RESISTANCE HEATING

M

MANUALS

*ACCIDENT PREVENTION MANUALS
*INSTALLATION MANUALS
*OPERATING MANUALS

MANUALS

*SAFETY MANUALS

MATERIALS

*COMBUSTIBLE MATERIALS
COMPOSITE MATERIALS
*DISPERSION STRENGTHENED MATERIALS
HIGH TEMPERATURE MATERIALS

*LOW DENSITY MATERIALS

*MATERIAL DEFECTS

*MATERIAL DEGRADATION

*MATERIAL FRACTURES

*MATERIAL PROCESSING

MATERIALS

*MATERIALS COMPATIBILITY

*METALLIC MATERIALS

*NONMETALLIC MATERIALS

PHOTOELASTIC MATERIALS

REFRACTORY MATERIALS

METALS

METAL ALLOYS

METAL FOILS

METAL MATRIX COMPOSITES

*METALLIC MATERIALS

METALLOGRAPHY

METALS

L

LIFE (DURABILITY)

*BEARING LIFE
*DAMAGED STRUCTURE LIFE
*EXPECTED LIFE
LIFE (DURABILITY)
*LIFE EXPECTANCY
*LIFE PREDICTION
LOADS (FORCES)
AERODYNAMIC LOADS

METHODS

- *ANALYSIS METHODS
- *FABRICATION METHODS
- *MAINTENANCE METHODS
- METHODS
- *NDE METHODS
- *NDI METHODS
- *NDT METHODS
- *STIFFNESS METHODS
- *TESTING METHODS

- FATIGUE PROPERTIES
- *FRACTURE PROPERTIES
- MECHANICAL PROPERTIES
- PHYSICAL PROPERTIES
- PLASTIC PROPERTIES
- PROPERTIES
- SHEAR PROPERTIES
- SURFACE PROPERTIES
- TENSILE PROPERTIES

P

PLASTICS

- *CRACK TIP PLASTIC ZONE
- *ELASTIC-PLASTIC ANALYSIS
- *ELASTIC-PLASTIC MODULUS
- PLASTIC COATINGS
- PLASTIC DEFORMATION
- PLASTIC PROPERTIES
- *PLASTIC STRAIN
- *PLASTIC ZONE
- PLASTICITY
- PLASTICS

PRESSURE

- *EXCESSIVE PRESSURES
- *OVERPRESSURIZATION
- PRESSURE
- PRESSURE OSCILLATIONS
- *PRESSURE TANKS
- *PRESSURE VESSEL CODES
- PRESSURE VESSELS
- *PRESSURIZATION
- SURFACE PRESSURE

PREVENTION

- ACCIDENT PREVENTION
- *ACCIDENT PREVENTION MANUALS
- CORROSION PREVENTION
- *FAILURE PREVENTION

PROCEDURES

- *ASSEMBLY PROCEDURES
- *CLEANING PROCEDURES
- *DESIGN PROCEDURES
- *INSTALLATION PROCEDURES
- *OPERATING PROCEDURES
- *OVERHAUL PROCEDURES
- PROCEDURES
- *STANDARD OPERATING PROCEDURES

PROPERTIES

- BIAXIAL PROPERTIES
- CREEP PROPERTIES
- ELASTIC PROPERTIES

RESISTANCE

- ABRASION RESISTANCE
- *BLAST RESISTANCE
- *BLAST RESISTANCE CRITERIA
- CORROSION RESISTANCE
- CREEP RESISTANCE
- *EROSION RESISTANCE
- FRACTURE RESISTANCE
- HEAT RESISTANT ALLOYS
- OXIDATION RESISTANCE
- *OXIDATION RESISTANT COATINGS
- RESISTANCE HEATING
- Thermal RESISTANCE

S

SAFETY

- *FACTOR OF SAFETY
- *FAIL-SAFE DESIGN
- *MARGIN OF SAFETY
- SAFETY
- *SAFETY CODES
- *SAFETY CRITERIA
- SAFETY DEVICES
- *SAFETY DIRECTIVES
- SAFETY FACTORS
- *SAFETY GUIDES
- SAFETY HAZARDS
- SAFETY MANAGEMENT
- *SAFETY MANUALS
- *SAFETY POLICIES
- *SAFETY PRACTICES
- *SAFETY PRINCIPLES
- *SAFETY REGULATIONS
- *SAFETY SPECIFICATIONS
- *SAFETY STANDARDS
- *SAFETY SYSTEMS
- *SAFETY TECHNOLOGY
- STRUCTURAL SAFETY
- *SYSTEM SAFETY

- SHEAR
 - *ANTI-PLANE SHEAR
 - SHEAR
 - SHEAR CREEP
 - SHEAR LIP
 - SHEAR LOADS
 - SHEAR PROPERTIES
 - SHEAR STRAIN
 - SHEAR STRENGTH
- SHOCK
 - SHOCK
 - SHOCK WAVES
 - THERMAL SHOCK
- STANDARDS
 - *CALIBRATION STANDARDS
 - *DESIGN STANDARDS
 - *ENGINEERING STANDARDS
 - *FABRICATION STANDARDS
 - *INSPECTION STANDARDS
 - *MAINTENANCE STANDARDS
 - *OPERATING STANDARDS
 - *PERFORMANCE STANDARD
 - *SAFETY STANDARDS
 - *TESTING STANDARDS
- *STRAIN
 - AXIAL STRAIN
 - *PLANE STRAIN
 - *PLANE STRAIN FRACTURE TOUGHNESS
 - *PLASTIC STRAIN
 - SHEAR STRAIN
 - *STRAIN
 - STRAIN ACCUMULATION
 - STRAIN AGING
 - STRAIN DISTRIBUTION
 - *STRAIN ENERGY RELEASE
 - STRAIN HARDENING
 - STRAIN RATE
 - STRESS-STRAIN DIAGRAMS
 - UNIAXIAL STRAIN
- STRENGTH
 - COMPRESSIVE STRENGTH
 - CREEP RUTURE STRENGTH
 - CREEP STRENGTH
 - *DISPERSION STRENGTHENED MATERIALS
 - FIBER STRENGTH
 - FRACTURE STRENGTH
 - HIGH STRENGTH
 - HIGH STRENGTH ALLOYS
 - IMPACT STRENGTH
 - *LOW STRENGTH STEELS
 - NOTCH STRENGTH
 - *RESIDUAL STRENGTH
 - SHEAR STRENGTH
 - STRENGTH
 - *STRENGTH RETENTION
 - STRESS RUTURE STRENGTH
 - TENSILE STRENGTH
 - *ULTIMATE STRENGTH
 - YIELD STRENGTH
- STRESS
 - *ALLOWABLE STRESSES
 - BIAXIAL STRESS
 - COMBINED STRESS
 - *DYNAMIC STRESSES
 - *MEAN STRESS
 - *MONOTONIC STRESS
 - *OVERSTRESS
 - *PLANE STRESS
 - *RESIDUAL STRESS
 - STRESS
 - STRESS ANALYSIS
 - STRESS CONCENTRATION
 - STRESS CORROSION
 - *STRESS CORROSION CRACKING
 - STRESS DISTRIBUTION
 - STRESS INTENSITY FACTOR
 - STRESS MEASUREMENT
 - *STRESS RAISERS
 - STRESS RATIO
 - STRESS RELAXATION
 - *STRESS RUTURE
 - STRESS-STRAIN DIAGRAMS
 - TENSILE STRESS
 - THERMAL STRESSES
 - TORSIONAL STRESS
 - *UNIAXIAL STRESS
 - YIELD STRESS
- T
- TEMPERATURE
 - HIGH TEMPERATURE
 - HIGH TEMPERATURE ALLOYS
 - HIGH TEMPERATURE ENVIRONMENTS
 - HIGH TEMPERATURE MATERIALS
 - HIGH TEMPERATURE TESTS
 - LOW TEMPERATURE TESTS
 - LOW TEMPERATURE
 - TEMPERATURE
 - TEMPERATURE CYCLES
 - TEMPERATURE DISTRIBUTION
 - TEMPERATURE EFFECTS
 - *TEMPERATURE LIMITATIONS

*TEMPERING TEMPERATURE
*VARIABLE TEMPERATURE
TESTS
*BEND TESTS
*CHARPY IMPACT TESTS
CREEP TESTS
*CYCLIC TESTING
DYNAMIC TESTS
*FATIGUE TESTING MACHINES
FATIGUE TESTS
FLIGHT TESTS
*FRACTURE TESTS
HIGH TEMPERATURE TESTS
*LABORATORY TESTS
*LEAK TESTING
LOW TEMPERATURE TESTS
*NDT
NOTCH TESTS
*PROOF TESTS
STATIC TESTS

*STORAGE TESTS
*TENSION TESTS
*TEST RESULTS
*TESTING METHODS
*TESTING SPECIFICATIONS
*TESTING STANDARDS
TESTS
VIBRATION TESTS
*WIND TUNNEL TESTS
TURBINES
GAS TURBINE ENGINES
TURBINE BLADES
TURBINES

V
VEHICLES
AEROSPACE VEHICLES
VEHICLES